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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/929,582	08/14/2001	Bruce A. Schofield	13854BAUS01U	9141
28901	7590	02/24/2005	EXAMINER	
BROMBERG & SUNSTEIN LLP NORTEL NETWORKS LIMITED 600 TECHNOLOGY PARK DRIVE, MS E65-60-103 BILLERICA, MA 01821			SINGH, DALZID E	
			ART UNIT	PAPER NUMBER
			2633	

DATE MAILED: 02/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	09/929,582		SCHOFIELD, BRUCE A.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Dalzid Singh		2633	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 September 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election with traverse of the restriction requirement in the reply filed on 29 September 2004 is acknowledged. The restriction requirement is withdrawn. Claims 1-18 will be examined.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 11-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Nishi et al (US Pub. No. 2002/0044718).

Regarding claims 11 and 15, Nishi et al disclose optical switching system, as shown in Fig. 2, comprising:

demultiplexing logic ((41-1) and (41-2)) for demultiplexing optical data streams from a plurality of incoming fibers ((46-1) and (46-2));

dropping/passing logic operable coupled to the demultiplexing logic for receiving the demultiplexed optical data streams from the demultiplexing logic and selectively dropping or passing each demultiplexed optical data stream ((42-1) and (42-2)) is a

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dropping/passing logic coupled to the demultiplexer ((41-1) and (41-2)); in the specification, as originally filed, on page 8 lines 6-10 applicant disclosed that the dropping fabric may use any variety of photonic switching technologies, therefore based on this, the photonic switches (42-1) and (42-2) of Nishi et al are considered as drop fabrics);

photonic switching logic (42-3) operably coupled to the dropping/passing logic (42-1) for receiving the passed optical data streams from the dropping/passing logic (42-1) and a number of new optical data streams (the new optical data stream is received by input XP1, XP2, XP3 and XP4) and to switch each of said optical data streams to an output port of the photonic switching logic; and

combining logic (43-1) operable coupled to combine the switched optical data streams from the photonic switching logic.

Regarding claims 12 and 16, as shown in Fig. 2, Nishi et al show plurality of demultiplexers ((41-1) and (41-2)) coupling to different fibers ((46-1) and (46-2)).

Regarding claims 13 and 17, in Fig. 2, Nishi et al show a plurality of drop-only fabrics ((42-1) and (42-2)), each drop-only fabric operable coupled to receive a plurality of demultiplexed optical data streams from the demultiplexing logic ((41-1) and (41-2)) and selectively drop or pass each demultiplexed optical data stream.

Regarding claims 14 and 18, in view of claim 1, in Fig. 2, Nishi et al show a plurality of combiners ((43-1) and (43-2)), each combiner operable coupled to combine a plurality of switched optical data streams from the photonic cross-connect switch (117<sub>1</sub>) with a number of new optical data streams to form an outgoing optical signal.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaminow et al (US Patent No. 5,623,356) in view of Bortz (US Patent No. 6,771,905).

Regarding claims 1 and 6, Kaminow et al disclose optical communication system, as shown in Fig. 1, comprising:

demultiplexing logic ((105<sub>1</sub>) to (105<sub>N</sub>)) for demultiplexing optical data streams from a plurality of incoming fibers ((101<sub>1</sub>) to (101<sub>N</sub>));

dropping/passing logic operable coupled to the demultiplexing logic for receiving the demultiplexed optical data streams from the demultiplexing logic and selectively dropping or passing each demultiplexed optical data stream ((111<sub>1</sub>) to (111<sub>N</sub>)) is a dropping/passing logic coupled to the demultiplexer ((105<sub>1</sub>) to (105<sub>N</sub>)); in the specification, as originally filed, on page 8 lines 6-10 applicant disclosed that the dropping fabric may use any variety of photonic switching technologies, therefore based on this, the photonic switches (111<sub>1</sub>) to (111<sub>N</sub>) of Kaminow et al are considered as drop fabrics);

photonic switching logic (117<sub>1</sub>) operably coupled to the dropping/passing logic (111<sub>1</sub>) for receiving the passed optical data streams (113<sub>1</sub>) from the dropping/passing logic; and

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combining logic (125<sub>1</sub>) operable coupled to combine the switched optical data streams from the photonic switching logic (117<sub>1</sub>) with a number of new optical data stream to form a plurality of outgoing optical signals (combining logic (125<sub>1</sub>) combines the through data signal received from switch (117<sub>1</sub>) and new optical data stream received from switch (117<sub>F</sub>)).

Kaminow et al show photonic switching as discussed and differ from the claimed invention in that Kaminow et al do not specifically disclose that the switch is switching each passed optical data stream to an output port of the photonic switching logic. However, such concept is well known. Bortz is cited to show switching device that is capable of switching each optical data stream to an output port of the switch. In Fig. 2a, Bortz shows each optical signal, such as from each input port ((30<sub>11</sub>) to (30<sub>ij</sub>)), is switched to an output port (30<sub>O1</sub>). Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to replace the switch of Kaminow et al with that of Bortz in order to switch multiple data stream from various input ports of the switch into an output port. One of ordinary skill in the art would have been motivated to do this in order to route plurality of signal from various sources into a single path.

Regarding claims 2, 7, 12 and 16, as shown in Fig. 1, Kaminow et al show plurality of demultiplexers ((105<sub>1</sub>) to (105<sub>N</sub>)) coupling to different fibers ((101<sub>1</sub>) to (101<sub>N</sub>)).

Regarding claims 3, 8, 13 and 17, in Fig. 1, Kaminow et al show a plurality of drop-only fabrics ((111<sub>1</sub>) to (111<sub>N</sub>)), each drop-only fabric operable coupled to receive a

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plurality of demultiplexed optical data streams from the demultiplexing logic ((105<sub>1</sub>) to (105<sub>N</sub>)) and selectively drop or pass each demultiplexed optical data stream.

Regarding claims 4 and 9, in Fig. 1, Kaminow et al show a plurality of combiners ((125<sub>1</sub>) to (125<sub>N</sub>)), each combiner operable coupled to combine a plurality of switched optical data streams from the photonic cross-connect switch (117<sub>1</sub>) with a number of new optical data streams (received from switch (117<sub>F</sub>)) to form an outgoing optical signal.

Regarding claims 5 and 10, in Fig. 1, Kaminow et al show first combiners ((125<sub>1</sub>) to (125<sub>N</sub>)), each of said first combiners operable coupled to combine a plurality of switched optical data streams from the photonic cross-connect switch (117<sub>1</sub>) with a number of new optical data streams (received from switch (117<sub>F</sub>)) to form a combined optical signal and differ from the claimed invention in that Kaminow et al do not specifically disclose second combiners, each of said second combiners operable coupled to combine the combined optical signal from a corresponding first combiner with a number of new optical data streams to form an outgoing optical signal. However, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to provide second combiners to add new optical data streams to form an outgoing optical signal. One of ordinary skill in the art would have been motivated to do this in order to add greater number of data signal to the outgoing signal.

Regarding claims 11 and 15, Kaminow et al disclose optical communication system, as shown in Fig. 1, comprising:

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demultiplexing logic ((105<sub>1</sub>) to (105<sub>N</sub>)) for demultiplexing optical data streams from a plurality of incoming fibers ((101<sub>1</sub>) to (101<sub>N</sub>));

dropping/passing logic operable coupled to the demultiplexing logic for receiving the demultiplexed optical data streams from the demultiplexing logic and selectively dropping or passing each demultiplexed optical data stream ((111<sub>1</sub>) to (111<sub>N</sub>)) is a dropping/passing logic coupled to the demultiplexer ((105<sub>1</sub>) to (105<sub>N</sub>); in the specification, as originally filed, on page 8 lines 6-10 applicant disclosed that the dropping fabric may use any variety of photonic switching technologies, therefore based on this, the photonic switches (111<sub>1</sub>) to (111<sub>N</sub>) of Kaminow et al are considered as drop fabrics);

photonic switching logic (117<sub>1</sub>) operably coupled to the dropping/passing logic (111<sub>1</sub>) for receiving the passed optical data streams (113<sub>1</sub>) from the dropping/passing logic (111<sub>1</sub>) and a number of new optical data streams (the new optical data stream is received from switch (111<sub>N</sub>)) and to switch each of said optical data streams to an output port of the photonic switching logic; and

combining logic (125<sub>1</sub>) operable coupled to combine the switched optical data streams from the photonic switching logic.

Kaminow et al show photonic switching as discussed and differ from the claimed invention in that Kaminow et al do not specifically disclose that the switch is switching each passed optical data stream to an output port of the photonic switching logic. However, such concept is well known. Bortz is cited to show switching device that is capable of switching each optical data stream to an output port of the switch. In Fig.



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2a, Bortz shows each optical signal, such as from each input port ((30<sub>I1</sub>) to (30<sub>Ij</sub>)), is switched to an output port (30<sub>O1</sub>). Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to replace the switch of Kaminow et al with that of Bortz in order to switch multiple data stream from various input ports of the switch into an output port. One of ordinary skill in the art would have been motivated to do this in order to route plurality of signal from various sources into a single path.

Regarding claims 14 and 18, in Fig. 1, Kaminow et al show a plurality of combiners ((125<sub>1</sub>) to (125<sub>N</sub>)), each combiner operable coupled to combine a plurality of switched optical data streams from the photonic cross-connect switch (117<sub>1</sub>) to form an outgoing optical signal.

6. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishi et al (US Pub. No. 2002/0044718) in view of Kaminow et al (US Patent No. 5,623,356).

Regarding claims 1 and 6, Nishi et al disclose optical switching system, as shown in Fig. 2, comprising:

demultiplexing logic ((41-1) and (41-2)) for demultiplexing optical data streams from a plurality of incoming fibers ((46-1) to (46-2));

dropping/passing logic operable coupled to the demultiplexing logic for receiving the demultiplexed optical data streams from the demultiplexing logic and selectively dropping or passing each demultiplexed optical data stream ((42-1) and (42-2)) is a

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dropping/passing logic coupled to the demultiplexer ((41-1) and (41-2); in the specification, as originally filed, on page 8 lines 6-10 applicant disclosed that the dropping fabric may use any variety of photonic switching technologies, therefore based on this, the photonic switches ((42-1) and (42-2)) of Nishi et al are considered as drop fabrics);

photonic switching logic (42-3) operably coupled to the dropping/passing logic (42-1) for receiving the passed optical data streams from the dropping/passing logic and switching each passed optical data stream to an output port of the photonic switching logic (as shown in Fig. 2, the photonic switch of Nishi et al is a matrix switch which is capable to switch each passed optical data stream to an output port); and

combining logic (43-1) operable coupled to combine the switched optical data streams from the photonic switching logic (42-3) to form a plurality of outgoing optical signals.

Nishi et al show photonic switching as discussed comprising combining logic (43-1) operable coupled to combine the switched optical data streams from the photonic switching logic (42-3) to form a plurality of outgoing optical signals and differ from the claimed invention in that Nishi et al do not specifically disclose that the combiner receives new optical data stream. However, it is well known that combiner is capable of receiving multiple optical data streams from a switching system and a new optical data stream. Kaminow et al is cited to show such well known concept. In Fig. 1, Kaminow et al show combining logic (125<sub>1</sub>) operable coupled to combine the switched optical data streams from the photonic switching logic (117<sub>1</sub>) with a number of new optical data

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stream to form a plurality of outgoing optical signals (combining logic (125<sub>1</sub>) combines the through data signal received from switch (117<sub>1</sub>) and new optical data stream received from switch (117<sub>F</sub>)). Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to provide a combiner which receives optical data stream from a switch and a new optical data stream. One of ordinary skill in the art would have been motivated to do this in order to combine new data with the selected data signal from the optical switch to form new set of data signal.

Regarding claims 2 and 7, as shown in Fig. 2, Nishi et al show plurality of demultiplexers ((41-1) and (41-2)) coupling to different fibers ((46-1) and (46-2)).

Regarding claims 3 and 8, in Fig. 2, Nishi et al show a plurality of drop-only fabrics ((42-1) and (42-2)), each drop-only fabric operable coupled to receive a plurality of demultiplexed optical data streams from the demultiplexing logic ((41-1) and (41-2)) and selectively drop or pass each demultiplexed optical data stream.

Regarding claims 4 and 9, in view of claim 1, in Fig. 2, Nishi et al show a plurality of combiners ((43-1) and (43-2)), each combiner operable coupled to combine a plurality of switched optical data streams from the photonic cross-connect switch (117<sub>1</sub>) with a number of new optical data streams to form an outgoing optical signal.

Regarding claims 5 and 10, the combination of Nishi et al and Kaminow et al shows first combiners (see Fig. 1 of Kaminow et al), each of said first combiners operable coupled to combine a plurality of switched optical data streams from the photonic cross-connect switch (117<sub>1</sub>) with a number of new optical data streams to form a combined optical signal and differ from the claimed invention in that the combination

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does not specifically disclose second combiners, each of said second combiners operable coupled to combine the combined optical signal from a corresponding first combiner with a number of new optical data streams to form an outgoing optical signal. However, it would have been obvious to an artisan of ordinary skill in the art at the time the invention as made to provide second combiners to add new optical data streams to form an outgoing optical signal. One of ordinary skill in the art would have been motivated to do this in order to add greater number of data signal to the outgoing signal.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Danagher et al (US Patent No. 5,959,749) is cited to show optical add/drop multiplexer/demultiplexer.

Kuroyanagi et al (US Patent No. 6,496,289) is cited to show optical exchanger.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalzid Singh whose telephone number is (571) 272-3029. The examiner can normally be reached on Mon-Fri 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272--3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DS  
February 16, 2005

*M. R. Sedighian*  
**M. R. SEDIGHIAN**  
**PRIMARY EXAMINER**